

The Push Toward Local Flood Risk Assessment at a Global Scale

Flood Risk Workshop; Boulder, Colorado, 1–3 October 2018



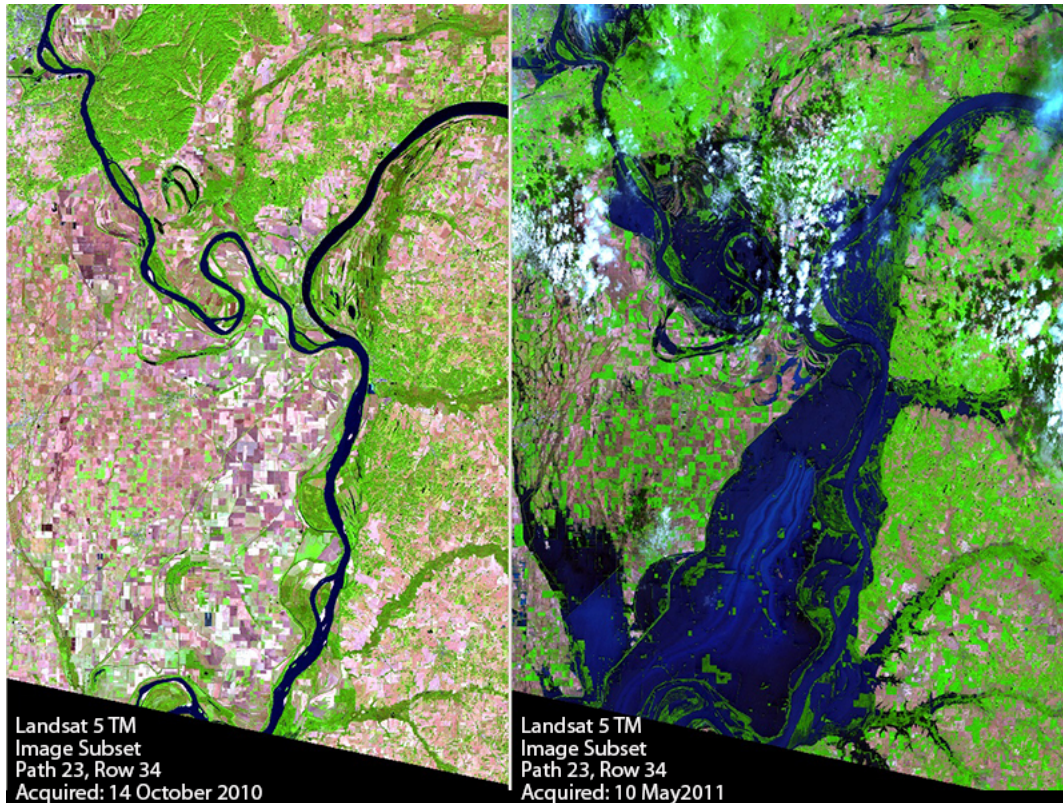
Aerial view showing flood damage in Colorado on 14 September 2013. Credit: [Staff Sgt. Wallace Bonner/U.S. Army](#)

By [Albert J. Kettner](#), [Guy J.-P. Schumann](#), and Beth Tellman © 14 January 2019

Flooding is the most common natural hazard and [affects more people](https://eos.org/opinions/millions-more-americans-face-flood-risks-than-previously-thought) worldwide than disaster. Apart from many fatalities and displacements, flooding [costs over US\\$100 billion](https://www.unisdr.org/we/inform/publications/48588) annually. Recent international community efforts like the 2016 [Flood Response Workshop](https://eos.org/meeting-reports/flood-response-using-earth-observation-data-and-products) have focused on providing products and services for flood disaster response assistance worldwide. However, flood risk requires more attention—evidenced by its framing in [the Sendai Framework for Disaster Risk Reduction](https://www.unisdr.org/we/coordinate/sendai-framework). This agenda and agreement calls for researchers to combine flood hazard analysis at a global scale with vulnerability metrics at local scales.

To discuss this need, approximately 80 researchers from different sectors and organizations gathered at the NASA-supported international Flood Risk Workshop. By forming a new Flood Risk Community of Practice (FRCP), the aim of the workshop was to reach consensus on priority actions to address the main challenges in [flood risk es](#)

(<https://eos.org/research-spotlights/tipping-point-for-nuisance-coastal-flooding-may-come-by-2050>) and align those actions with the goals of the Group on Earth Observations ([GEO 2017–2019 Work Programme](https://www.earthobservations.org/geoss_wp.php)) (https://www.earthobservations.org/geoss_wp.php) and the Sendai Framework for Disaster Risk Reduction (<https://www.unisdr.org/we/coordinate/sendai-framework>).



Landsat images of the Ohio-Mississippi River confluence before and during floods in 2011. Credit: [USGS](https://water.usgs.gov/floods/events/2011/BPNM/)

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Workshop participants identified a need to better understand availability in data and tools to mitigate flood risk. Addressing this need will facilitate a global method comparison between various Earth-observing data sets, models, and maps while ensuring a focus on local flood risk and [impacts of climate change](https://eos.org/articles/massive-ocean-waves-may-play-a-role-in-nuisance-flooding) (<https://eos.org/articles/massive-ocean-waves-may-play-a-role-in-nuisance-flooding>). Together, the attendees defined a 10-year plan to be addressed by FRCP:

Phase I is laying the foundation for FRCP by establishing the following:

- interoperability of products through implementing well-established standards (for example, [Open Geospatial Consortium standards](http://www.opengeospatial.org/) (<http://www.opengeospatial.org/>))
- communication of methods and models to encourage transparency and ultimately accelerate scientific advances of the community by building upon knowledge
- uncertainty estimation for flood risk mapping and modeling products to better ensure informed decisions by flood risk management

At the end of this 2-year period the FRCP group will have (1) a document that addresses the above-identified topics and (2) a demonstration framework to show how improving products will help societies and the wider community.

Phase II encompasses broadening community consensus by reaching out to key data providers to ensure that required data are open access and globally available, on improved lead times and confidence in forecasts, and broadening the network of practitioners and data providers, so end users can continue to give feedback to FRCP.

Phase III is establishing a Global Flood Consortium (GFC). GFC will be a sustained consortium, incorporated as an international not-for-profit and community-run organization. The mission of GFC is to ensure access to global flood hazard and risk monitoring and forecast data and models as well as to provide access to archival data sets. GFC will make use of already available platforms like the [Global Flood Partnership](https://gfp.jrc.ec.europa.eu/) (<https://gfp.jrc.ec.europa.eu/>).

More information on the workshop and presentations can be found [here](https://csdms.colorado.edu/wiki/FloodRiskWorkshop) (<https://csdms.colorado.edu/wiki/FloodRiskWorkshop>).

We thank [NASA](https://disasters.nasa.gov/news/nasa-disasters-mapping-portal-launches) (<https://disasters.nasa.gov/news/nasa-disasters-mapping-portal-launches>), [Remote Sensing Solutions](http://remotesensingolutions.com/) (<http://remotesensingolutions.com/>), and the [Community Surf Dynamics Modeling System](https://csdms.colorado.edu/) (<https://csdms.colorado.edu/>) for sponsoring this workshop.

—Albert J. Kettner (kettner@colorado.edu (<mailto:kettner@colorado.edu>)), Dartmouth Flood Observatory (DFO), Institute of Arctic and Alpine Research, University of Colorado (CU) Boulder; Guy J.-P. Schumann, Remote Sensing Solutions, Barnstable, Mass.; also at University of Bristol, U.K.; also at DFO, CU Boulder; and Beth Tellman, CU Boulder; also at School of Geographical Science and Urban Planning, Arizona State University, Tempe

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